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ABSTRACT

This paper examines the teacher educator's role in assisting prospective teachers to grasp what it means to transform knowledge so that content and pedagogy intersect. Knowledge is not certain nor is its authority held in the text or the teacher's lesson plans. If students perceive knowledge to be open-ended, requiring vital curiosity, they will look for connections to other pieces of knowledge and for powerful teaching strategies. This study describes a teacher educator's experience with undergraduates in a small liberal arts college and a large university in the midwest and emphasizes that teaching a course about teaching poses special problems for the teacher educator which do not appear in other teacher preparation courses. In a course titled "Education and the Exceptional Child," the teacher was concerned with transforming knowledge and dispositions and tried several measures in order to change students' ideas about Down's Syndrome. Some success was achieved. In the second course, "Exploring Teaching," the transformation of knowledge seemed less clear and the teacher detected hesitancy in being direct about that process as the middle ground between questioning old thinking and provoking new learning. (LL)

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Center for Research
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TRANSFORMING KNOWLEDGE IN UNDERGRADUATE TEACHER EDUCATION

Gem Reid

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Abstract

The author explores her experience with teacher education undergraduates in a small liberal arts college and a large university. The paper traces the teacher educator's struggle to help students grasp what it means to be lively with subject matter or to transform it. The author reveals different levels of uncertainty about transformation, the theorists and her own, with students in the Education of the Exceptional Child, where she was concerned with transforming both knowledge and dispositions, and her students in Exploring Teaching, where the transformation of knowledge seems less clear. Several measures were tried in the Education of the Exceptional Child with as much success as one can judge. In Exploring Teaching the author detected her own hesitance to be direct about that process as she looked for a middle ground between questioning old thinking and provoking new learning.

TRANSFORMING KNOWLEDGE IN UNDERGRADUATE TEACHER EDUCATION

Gem Reid[1]

As a teacher educator I have struggled to show prospective teachers that teaching is not telling but doing something energetic and lively with content. In my view, if prospective teachers envisage their work in classrooms as controlling children and content, then they will act as if knowledge is certain—its authority held in the text or the teacher's lesson notes. If, on the other hand, they perceive knowledge to be open ended, requiring vital curiosity, they will look for connections to other pieces of knowledge and will look for powerful teaching strategies. It is the struggle to help novices grasp this distinction that motivates this commentary on my practice.

In this paper, I compare two occasions of practice. In one I taught The Education of the Exceptional Child at a small liberal arts college in the midwest and in the other I taught Exploring Teaching at Michigan State University's College of Education. I have had four-years experience trying to persuade teacher education undergraduates that teaching entails something called "transforming knowledge," yet the concept of knowledge transformation has not always been clear to me. Nor were theorists' ideas immediately applicable in my introductory course. They constitute the ideal. Wilson, Shulman, and Richert (1987) suggest:

> The key to distinguishing the knowledge base lies at the intersection of content and pedagogy, in the capacity of the teacher to transform the content knowledge . . . into forms that are pedagogically powerful and adaptive to the variations in ability and background presented by the students. (p. 10)

It is hard to connect these words to my beginning students' misunderstandings. It is hard to think about transforming knowledge when you are busy amassing it and hard to think about pedagogy when content remains insecure. The intersection of content and pedagogy hardly seems to make sense. Could anyone transform knowledge? Is every education candidate really a potential teacher in this important sense? What would transformed knowledge as distinct from knowledge that is not transformed look (and feel) like to the teacher and the pupil? And more philosophically, is transformation of knowledge related to Dewey's description of learning as the continuous reconstruction of experience?

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[1]Gem Reid, a former Australian secondary school teacher, is a doctoral candidate in teacher education at Michigan State University.

Without reconstruction of experience is there no transformation? Is transformation intellectually and emotionally difficult?

In the past, I have erred between swamping students with bewildering terms and images such as *respecting students' potential* and *creating a conversation with pupils* and encouraging students to question their assumptions about teaching. I am looking now for a middle ground: creating, on one hand, experiences and opportunities for prospective teachers to express the naive ideas I want them to change while, on the other hand, preserving a place for me to actively promote these changes.[2] I conclude that teaching a course about teaching poses special problems for the teacher educator that do not appear in other teacher preparation courses. The two courses I describe below each present unique difficulties for the teacher educator who wants to transform novice's ideas about teaching and learning.

Changing Ideas About Down's Syndrome

In the first course, Education of the Exceptional Child (a one-semester sophomore course), I wanted to develop an informed acceptance of exceptionalities. My students had little experience or knowledge of exceptional children. I wanted to foster appropriate dispositions toward those children and other differences in the classroom. I wanted students to know much more than they might replicate on a fact quiz. I wanted to transform both their knowledge and their dispositions.

I hoped exceptionalities would come to life as students became experts of parts of the material and shared it with the class. Each student had chosen a major exceptionality to research and present. I issued no text but distributed assorted readings as a class package, and I placed other readings on reserve in the college library. Usually each student's presentation would take a full class—50 minutes—and a second class would be devoted to exploring implications for practicing or prospective teachers. Connections between one exceptionality and another could be readily examined, and, in an informal setting, students could feel free to express their doubts about dealing with difference of whatever kind in classrooms.

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[2]Cohen illuminates my difficulty in these words. "Adventurous instruction makes distinctive demands on teachers. It opens up uncertainty by advancing a view of knowledge as a developing human construction and of academic discourse as a process in which uncertainty and dispute play central parts. It increases the difficulty of academic work by replacing memorization of facts and rules with disciplined inquiry and argument. And it invites teachers to depend on students to produce an unusually large share of instruction. . . . Such teaching can be done and done well. But to do so, ways to relinquish the old instruction must be found, and new strategies devised at the same time. Neither is easy" (Cohen, 1988, p. 36).

In one case I saw my hopes realized. One of my students, Anne,[3] was redoing this course after an altercation with the previous professor. She was useful to me. She had experienced two approaches to teaching this material to prospective teachers. The first had listed content for memorization, and the second, mine, looked for a worthwhile conversation, transforming knowledge as students interacted with the material and with one another.

When her turn came, Anne took her presenter's position in the circle of chairs waiting for class to commence promptly at 1:30. She was to lead a discussion on Down's Syndrome. Anne had not found much information in the college library, but she lived some 30 miles away in a small rural town and knew of a child there suffering from Down's Syndrome. She went home for the weekend and spent much of her waking hours with this family. She observed Paul, a seven-year-old child and spoke (and cooked) with Paul's mother. She also spent time with his father and an older sister.

In her presentation, she reflected on her findings, sensitively treating 17 class members to an exploration of the difficulties, the labeling, the schooling problems, and the discouraging fight to determine whether Paul was educable or trainable. She understood the parents' continuing grief. She felt the older child's conflict and was able to create a picture of Paul's daily experience.

I was excited. Anne spoke carefully with deep respect for her human evidence. Her listeners were mesmerized and attentive. Anne had brought Paul into the classroom. She did not need her ample notes but alternatively fielded questions and returned to the thread of her presentation. Anne had transformed her knowledge and our knowledge about Down's Syndrome in this assignment. She could describe Paul. She could answer questions. She could quote his parents. She had seen how they lived and loved their son. In her presentation she recreated the scene and its tensions. Her knowledge of Paul and empathy for the family became ours in a vital exchange. We were *different* for having met Paul and that difference was our transformation.

Students' writing three weeks after Anne's presentation illustrated more acceptance of student differences. In my journal at that time I wrote

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> Students were comfortable with our work on definitions. Knowledge of the IEP was accurate. Interest in both the teacher and the parent role came through clearly. Some confusions remaining in the literature surfaced. . . .

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[3]Names of students and child are pseudonyms.

> Distinctions emerged between talking about and working with exceptional children.

In another attempt to see if transformation were happening I observed small student discussion groups working with Julius Segal's (1978) *A Child's Journey*. I used to think that I could have an impact on my students simply by exposing them to particular readings. Of course that is far from transforming knowledge. For some good readers, interaction with the reading alone will be meaningful. For others, interaction will be minimal. When I presented this piece to students, I asked them to determine the most controversial element in the piece. I hoped these conversations might hammer away at individual preconceptions. I saw students well versed now in group work looking thoughtful and serious. I observed disagreements among students and an apathetic group taking no notes. In my journal, I wrote "Students seem to be learning the content of the piece; how others see the same content; how others see the significance of the content." In a fastwrite some students supported my hope:

> I was one of those closed minded people who shied away from those who did not fit the type I was used to seeing. I have totally changed that opinion and now am accepting of those who are not my equal caliber and realize that because of their exceptionalities they not only need our support and knowledge but they are also human beings that have feelings and can be hurt just like you and me. (Jones, Student Journal Letter, May 5, 1987)

This is a difficult comment for a teacher to interpret. The student claims to be learning tolerance, yet uses the phrase "equal caliber" to define differences.

Late in February I wrote in my journal,

> Students are now combining the benefits of knowing some literature, shared writing and presentations. They have a sense of their own voices in this developing conversation. Another interesting thing happened in class. Students raised the *human worth* of the handicapped or disabled. What exactly is human worth? I put this on the board in big letters. What might we be talking about?

That was slow going but these challenges seem to keep the hope of transformation alive. Perhaps in teaching practice that hope is as far as we can reach?

Next class I introduced role playing because it seemed to galvanize curiosity and energy, and I imagined these feelings usually contribute to the transformation of knowledge. For example, taking on the role of a parent I proposed an unpopular view. Students were dumbfounded. Did Reid really think that? Later I wondered (possibly cynically) if students too were role playing their concern and compassion for disadvantaged children while still prejudiced against them.[4] Would this mean that transformation had not occurred?

In a lesson late in February, I placed two empty chairs in front of me facing my students. I introduced imaginary eight-year-old children Billy and Jean who were learning disabled. I posed the question—what can we as teachers do to help these children? One student suggested we should use another chair in the middle for a student without the problem. We saw communication was blocked by this straight line of bodies and chairs, and we shaped a cluster of chairs so that students could all see one another. We practiced talking with these pupils and once more engagement was lively. We introduced Billy's father and Jean's mother who shared their hopes and fears with us. We planned a day's class for the whole group enabling Billy and Jean to be doing—or appear to be doing—work like the others. To follow this occasion I invited the college counselor to class to explain the nature of the helping relationship. I was anxious to expose students to the way professional people behave with and think about the disabled. I wanted them to recognize their own professional boundaries of understanding and expertise. Using our imaginations and the guest speaker helped us to think differently. But could I be sure?

On the first of April the class was moved to tears by some readings I had selected from Helen Featherstone's (1980) book *A Difference in the Family*. Encouraging acceptance had been a linchpin of our study of exceptional children but that emphasis seemed abstract until Featherstone's account. I read sections where Jody, Helen's son, is described: times with the doctors, the siblings' moving story of the witch,[5] then Helen's description of picking up Jody at school and realizing he had taught her about the beauty of the disabled child. I looked up and my class had dissolved in tears. I quietly left the room.

I report in my journal some weeks later that students were looking at the role of the parents more closely. I considered this aspect of the discussion to be extremely important. It is hard for prospective teachers, few of whom were even married, let alone being parents, to think like parents—to see the needs and rights of parents! These stories were invaluable,

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[4] When feeling particularly cynical I wondered if we all role played the transformation of knowledge in the things we said and wrote but our hearts remained untouched and our minds closed. It would be hard to prove this either way.

[5] Jody's two sisters create a radio play where the older sister adopts the voice of a witch. The two children struggle to answer how much they owe their brother and how much they can leave to others (p. 140).

and class members wrote a combined letter to Helen Featherstone thanking her for helping them understand exceptionality and, as one put it, "for coming into our lives." This initiative and these words helped me know that students had changed their perceptions in important ways. Helen Featherstone's shared experience with my class demonstrated the powerful difference story telling can make in transforming knowledge.

Some interventions had apparently worked in this teacher education class. Students had made new knowledge their own, questioned, absorbed it, and used it in group exercises. These interventions included Anne's firsthand evidence, personal research, and presentation; fastwrites forging a synthesis of experience; working with pieces of literature like those of Segal and Featherstone; discussion and role playing. The interventions piqued curiosity, invited intellectual and social energy from students, and found powerful ways to make the point. Still, the impact was uneven. On one hand, when Anne evaluated the course, she said, our classroom conversations gave meaning to the facts. Perhaps that is one way of defining transformation of knowledge. On the other hand, another student's evaluation of the course retains traditional attitudes to learning, equating learning with reciting facts, and applying those facts: "I think what I enjoyed most about this class was not only learning—being able to recite facts on exceptionality but knowing I will be able to apply what I have learnt to my classroom teaching" (Richards, Student Journal Letter, May 1, 1987). One thing I have learned since I taught this course is the value of asking students to write down what they think they are learning. Their comments can be enormously useful in assessing one's own progress, as the following will illustrate.

Exploring Teaching

The second course in which transformation was important to me was one called "Exploring Teaching," offered at Michigan State University. This is an introductory course designed to help students understand more of the realities, challenges, and demands of teaching as work. It attempts to alert them to assumptions they are likely to hold about teaching and to begin the process of breaking away from those assumptions. One of the assumptions students are likely to hold is that teaching is telling. It involves reproduction of knowledge rather than the transformation of knowledge. Readings and class exercises should shake some of these assumptions. I found two puzzles as instructor. The first was the diverse student responses to the challenges I made, and the second was my own hesitation in telling students what I thought about teaching.

During my first month at Michigan State University my students had been puzzling over the question "What is teaching?" Students had read and executed group exercises

based on Paley's *Wally's Stories* (1981), David Hawkins (1974), and their own experience of teaching and learning. At the end of the month, I asked students to write about what they were learning. I made the request at the beginning of class and imposed a 10-minute time limit. I wondered how they would define their own learning. I wondered how they perceived knowledge. I wonder whether I was meeting any of my objectives as a teacher educator in an exploratory course or whether students were making sense of the experience in individualistic not necessarily congruent ways with my articulated and silent expectations. As the examples below illustrate, students were drawing a variety of conclusions from the course.

> In this class you are much less specific about information. I guess I feel more like a sponge, thoughts seep in without much leaking out. There seems to be a higher retention level with this class. I feel this is good but it also makes me uneasy. I like expressing my ideas, listening to students' ideas, the high level of interaction, hardly ever being bored in class. But on the other hand I'm uneasy because I'm not sure I'm taking in what I should be, you seem to be very interested in us sorting out what we need to learn. It seems as though you let us take in what we can on our own, and step in only when we miss something. (Philippa)

Philippa's response helped me see I had not found the middle ground I wanted between lecturing and guided discussion—between provoking new learning and questioning old thinking. Her sponge does not seem very analytical—her thoughts do not seem too *active*. She senses a "higher retention rate," but what is being retained? As Philippa sees it, I only intervene if the class has missed a crucial point. This might imply some sloppy debate and wasted time. It might imply those are the points in the conversation she records and thinks significant. I might have entered the class not sufficiently keyed up to punch home the essential elements to change perceptions. Philippa is not bored, but neither is she sure about what she takes away.

Philippa's response raises my doubt. By *not* telling my students the elements of good teaching, I may have prevented them from growing in surefooted ways. I wanted students to discover these features for themselves—had I gone too far? Had I given students too much autonomy and too little instruction? Was it harder to find my balance here compared with the Exceptional Child class?

Diane wrote, "As a learner I am intrigued. I love information and learning new ideas. In this introductory course I try to strengthen my ideas, broaden my views and build self confidence in teaching." Diane's intentions to improve herself in rather general

terms--strengthening ideas she already held, broadening views she already had--might match Philippa's description of "less specific information." In fostering a climate where students could begin to unleash their own experiences of schooling, I had not specifically helped them interpret these experiences or reconstruct past insights. Who had been setting the terms of the discourse which had effectively broached new terms but had reinforced old insights? Were we stuck? Why was I so hesitant to suggest what lively teaching or transformation of knowledge might mean? If I were teaching history, I would not hesitate to define *revolution*. In teaching teaching, I seemed to hesitate to tell anything.

> This class is making me *think* and analyze instead of the usual *memorize the teacher's opinion* classes that I have had in the past. I like that about it. It is not just playing on my prior knowledge but it's making me look at things in different ways and actually learn things. (Penny)

In her response, Penny comes close to some of the elements of transformation of knowledge that I had hoped to see. She compares thinking with reproducing teacher opinions. Penny feels compelled to look at things in different ways but the specifics of those differences do not rattle off her pen. This troubles me. Her phrase, "just playing on my prior knowledge" is intriguing for I feared I had effectively challenged previous assumptions about teaching or teachers without clearly flagging (or convincingly arguing for) alternative perspectives. If only, as a teacher educator, I could get my teeth around my private words "Teaching is the transformation of knowledge—that transformation depends on subject matter expertise, pedagogical skill and knowledge of learners." In my inclination to nurture students' participation (helping students discover rather than absorb knowledge about teaching—be active rather than passive), I stood back from my chance to change students' minds about teaching's essential elements. I needed my middle ground and perhaps I would gain it with closer attention to the chosen texts.

> It's usually difficult for me to focus my mind and my energies on my studies. I do the work, and I do learn, but its almost like I am scared of the projects . . . or the reading. I feel if I don't become interested in it, I won't be hurt by a bad grade. This also makes it hard for me to learn. I feel as if I'm just absorbing knowledge. This bothers me. It has bothered me all my college career. I try to force myself to understand that I do have good ideas about subjects and they won't be all knocked down. (Susan)

Susan's response illuminates the emotional confusion about knowledge that many prospective teachers have as they enter the College of Education. Those confusions have been consolidating over time and are not easy to displace or resolve. Serious difficulties get in Susan's way—she lacks self-confidence, concentration, and motivation. To grasp what transformation means and to transform knowledge she will need all three. She is anxious about work and assessment. She wants to interact with knowledge, to question and probe, but lacks assurance. A sincere but rather meek student, Susan is illustrative of many shy prospective teachers in courses like these. What special interventions—intellectual and emotional—did I need for her? Would concern for that issue take easy precedence over my own intellectual task of figuring out ways to explore teaching with my class?

"Every time I leave this class, I am more energized and excited about the material. I know I am accomplishing something as a learner, if I leave the classroom reflecting on the material discussed in class" (Jane). From week to week Jane built on previous classroom conversations and previous readings with a reflective bent and a lively mind. She was unusual—many students found it hard to summon the imaginative element in reflection. I valued her contributions and gave her opportunities to lead classroom discussion and to tutor others. Both her intellectual and emotional excitement were real. She demonstrated her independent thinking each class. Perhaps she could have rejoiced in further challenge. Jane's example highlights the tension in teaching between individual members and the whole class. But in accommodating that tension I spent more energy cajoling others to be assertive rather than attending to the high flyers like Jane.

"A positive aspect of the class is that I have begun to focus not on the material alone but on myself as learner. Some of my attitudes have been changed" (Jill). An older student, Jill has been able to examine her own learning separately from the material. I hoped if prospective teachers had a better understanding of themselves as learners this would lead them to more clearly recognize teaching and learning. I wished Jill had written in more detail, illuminating which attitudes had changed, and giving me some chance to pinpoint parts of the course that helped her think. As an older student returning to college, Jill had needed emotional support early in the course. Then she began to flourish—to ask penetrating questions, to lead her group, to be effectively curious. Still I was not satisfied. What had I done with those exciting developments? In keeping my interventions to a minimum I may have failed to push her as far as she could go. It was too comfortable a journey. I felt no dissonance.

> It is my attitude that has changed. Perhaps I've finally reached the stage where I can be my own teacher, for I find myself excited and challenged by

> the information presented. The key seems to be that I am interacting with the material *in my own way*. Constantly I ask myself questions such as "How can I prove that?" or "How does that affect me?" My focus is no longer on tests grades but on knowing. (Sarah)

Some better students can make great strides with the readings, discussions, and papers in such a course, experiencing changed attitudes to knowledge and teaching, and can assume higher responsibility for teaching themselves. They seem to really come to grips with the readings, stewing over their implications. Sarah also sought me out for private conversation. I suggested additional readings, and we discussed these together. But what exactly has excited her—access to a new learning *process* or new *understandings*?

Knowledge transformation can occur when the teacher and students uncover new insights in the content. Layers of understanding unravel as teacher and students explore the problem, unearth and question its elements. Stories are told and deciphered for their meaning. Personal experiences add credence. Students step into other roles. In these ways we might be said to have transformed aspects of exceptionality in the Education of the Exceptional Child course.

In Exploring Teaching my problem was to help raw beginners partly trapped by powerful memories of schooling to see that the teacher will not be successful in bringing knowledge to life when students are passive—not accepting responsibility in reworking material. This beginners' course calls for different types of insight in my work as a teacher educator from my efforts to work with differences in Education of the Exceptional Child. I needed to keep puzzling over these differences. I must bring new insights of teaching and learning to both and I must know if students' transform their knowledge. In doing so I must balance my nurturance with a crisp intellectual challenge. I must keep seeking out my middle ground between the advantages of student participation and my interventions, remembering the hazard that students can participate or I might intervene readily enough without touching my students' understanding of teaching.

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